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EXAMINER

SCHECHTER, ANDREW M

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/599,018

Applicant(s)

MATSUO ET AL.

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 11-18 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 23 Oct 03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 23 October 2003 have been fully considered but they are not persuasive.

Claim 1 has been amended to recite a diffusing plate between the light guide plate and the display device, which overcomes the rejection under 35 U.S.C. 102 in view of *Sakakibara* (which apparently does not disclose such a diffusing plate). However, diffusing plates between the light source and the liquid crystal display panel are well-known (to the extent that there is a subclass specifically for them, 349/64), so the following rejections under 35 U.S.C. 103 in view of *Sakakibara* are appropriate, and similarly for the rejections in view of *Okajima*.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sakakibara*, Japanese Patent Document No. 04-27487 in view of *Ciupke et al.*, U.S. Patent No. 5,461,547.

Sakakibara discloses [see Fig. 2] a display device comprising a light source [3], a light guide plate [2] with an incident surface and an emitting surface as recited, a non-light emitting display device [1], a holder for housing the above which includes: a first holder [7] covering at least the entire back surface of the light guide plate, a second holder [6] covering at least the entire front surface of the light guide plate, with an opening [see figure] with length and width dimensions corresponding to the length and width dimensions of the non-light emitting display device, and wherein the second holder is formed dividably from the first holder, and a light source housing chamber [see Fig. 1] is formed by combining the first and second holders, and has an opening corresponding to the incident surface of the light guide plate.

Sakakibara does not necessarily disclose a diffusing plate between the light guide plate and the non-light emitting display device for uniform distribution of the light. *Ciupke* does disclose such a diffusing plate [31] between the light guide [11] and the display device [12] in an analogous situation. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the diffusing plate of *Ciupke* in the device of *Sakakibara*, motivated by *Ciupke*'s teaching that it "receives the emitted light and diffuses the light so that light of relatively uniform intensity strikes the back of the LCD" [col. 3, lines 19-21], thus improving the display quality. Claim 1 is therefore unpatentable.

In *Sakakibara*, the first and second holders include first and second housing areas [near 6a and 7a] as recited in claim 2, so claim 2 is also unpatentable. The light source housing chamber includes a light source holding part [6a and 7a], so claim 6 is

also unpatentable. The back surface of the first holder is formed in a predetermined shape so as to control light reflection and diffusion, so claim 9 is also unpatentable.

Light emitted from the light source and light incident to the light guide plate is prevented from leaking from the surfaces except for the emitting surface because all surfaces of the light source and light guide plate are covered with the first and second holders, except for a surface facing to the opening [see Fig. 1; note that the first and second holders completely enclose the light source and light guiding plate, except for the surface facing the opening in the second holder, so all the relevant surfaces are covered from the viewpoint of light-blocking, even if the holders are not in direct contact with surfaces]. Claim 10 is therefore unpatentable as well.

4. Claims 1-3, 7, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Okajima et al.*, U.S. Patent No. 5,334,993 in view of *Ciupke et al.*, U.S. Patent No. 5,461,547.

Okajima discloses a display device comprising a light source [111], a light guide plate [13], a non-emitting display device [10], and a holder for housing the above, wherein the holder includes a first holder [113] having a back surface covering the back of the light guide, a second holder [112 and 12] having an opening, with proper dimensions, for the display area and formed dividably from the first holder, and a light source housing chamber [see Fig. 4] for housing the light source, with an opening, formed by combining the first and second holders.

It might be argued that the second holder in the present specification is a single piece, while the second holder in *Okajima* is in two parts. It does not appear to the

examiner that the scope of the claim language excludes this possibility (if the applicants believe otherwise, they should bring this to the attention of the examiner.) In that event, *Okajima* would not teach a single-piece second holder; however, it has been judicially determined that it would be within the skill of one of ordinary skill in the art to make the two pieces integral [*in re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965), for example], motivated among other reasons by the desire to reduce the number of parts and number of manufacturing steps.

Okajima does not necessarily disclose a diffusing plate between the light guide plate and the non-light emitting display device for uniform distribution of the light. *Ciupke* does disclose such a diffusing plate [31] between the light guide [11] and the display device [12] in an analogous situation. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the diffusing plate of *Ciupke* in the device of *Okajima*, motivated by *Ciupke*'s teaching that it "receives the emitted light and diffuses the light so that light of relatively uniform intensity strikes the back of the LCD" [col. 3, lines 19-21], thus improving the display quality. Claim 1 is therefore unpatentable.

In *Okajima*, the first and second holders have first and second housing areas, so claim 2 is also unpatentable.

The first and second holders are formed with resin [col. 2, lines 58-62], so claim 3 is unpatentable. (Part of the second holder is made of metal, but the claim language is open-ended so it does not exclude other materials in addition to the resin.)

The second holder includes a shading piece [see Fig. 4] facing the emitting surface of the light guide, in a periphery of an incident surface, so claim 7 is unpatentable.

The back surface of the first holder is formed to be a reflecting surface [col. 3, lines 1-5], and there is no reflecting sheet provided between the light guide plate and the back surface, so claim 8 is unpatentable.

The surfaces of the light source and light guide plate are covered appropriately so that there is no light leakage. Claim 10 is therefore unpatentable.

5. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Okajima* in view of *Ciupke* as applied to claim 1 above, and further in view of *Nagakubo et al.*, U.S. Patent No. 6,313,891.

The additional limitation of claim 5, a reflecting surface on the inner surface of the housing chamber, is not explicitly disclosed by *Okajima*. *Nagakubo* does disclose this in an analogous context [see 19b in Fig. 4, col. 9, lines 34-37], and it would be obvious to one of ordinary skill in the art to do the same in *Okajima*, motivated among other reasons by *Nagakubo's* teaching that this improves "the reflection efficiency of the light irradiated from the backlight source". Claim 5 is therefore unpatentable.

The additional limitation of claim 9, that the back surface of the first holder is formed in a predetermined shape so as to control light reflection and diffusion, is not disclosed explicitly by *Okajima*. The examiner interprets "formed in a predetermined shape so as to control light reflection and diffusion" as including printed dots on the reflector, which have some thickness and therefore change the "shape" of the back

surface, and are furthermore widely used to affect the reflection and diffusion of the light. *Nagakubo* does disclose this in an analogous [see 19e in Fig. 4, col. 9, lines 45-50], and it would be obvious to one of ordinary skill in the art to do the same in *Okajima*, motivated among other reasons by the desire to have a "light quantity control portion" which improves the evenness of the light reflected from the back reflector. Claim 9 is therefore unpatentable.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Okajima* in view of *Ciupke* as applied to claim 1 above, and further in view of *Yamada et al.*, U.S. Patent No. 5,704,703.

The additional limitation of claim 9, that the back surface of the first holder is formed in a predetermined shape so as to control light reflection and diffusion, is not disclosed explicitly by *Okajima*. If the applicants were to interpret "formed in a predetermined shape so as to control light reflection and diffusion" in a manner which excludes printed dots (which they should bring to the attention of the examiner), then the examiner notes that *Yamada* discloses a reflector in an analogous context formed with protrusions [see 313 in Fig. 41, col. 9, lines 45-50], and again it would be obvious to one of ordinary skill in the art to do the same with the reflector back surface in *Okajima*, motivated among other reasons by the teaching of *Yamada* that "an even luminance distribution can be obtained over the emission surface" [col. 22, lines 19-21] in this manner. Claim 9 is therefore unpatentable.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Okajima* in view of *Ciupke* as applied to claim 1 above, and further in view of *Kim*, U.S. Patent No. 6,016,175.

The additional limitation of claim 6, that the housing chamber includes a light source holding part, is not explicitly taught by *Okajima*. *Kim* does disclose a light source holding part (projecting parts 200, 201, see Figs. 9-11) which are formed as part of the frame (or "housing chamber" in the case of *Okajima*). It would have been obvious to one of ordinary skill in the art to form such light source holding parts are part of the housing chamber, motivated among other reasons by *Kim*'s teaching that this design is "simplified" and "a more stable construction", and that "there is no possibility of the position determiner breaking away from the frame". [col. 6, lines 39-50] Claim 6 is therefore unpatentable.

Allowable Subject Matter

8. Claims 4 and 11-18 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or fairly suggest the additional feature recited by claim 4, that the first and second parts of the holder are connected by a flexible connecting part that attaches to the first and second parts and is formed to be thinner than the first and second parts, in combination with the other claimed features of the

display device. Claim 4 is therefore allowed, as are claims 11-18 which depend on claim 4.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-4711.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

AS
Andrew Schechter
6 November 2003

Thawing
T. Chowdhury
Primary Examiner